A Framework for Improved Risk Management with Case Study from Guatemala

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Introduction

Accordingly to their background (from natural to social sciences), researchers are developing sound analyses that provide broad, integrated, and comprehensive approaches when they are all considered together. Nevertheless, and especially when they are applied to developing countries, these risk management approaches hardly fit when it comes to implementation issues.

Methodology

In parallel with this geological study a sociological study was performed within the same communities (Cotoxac, Chamac, Jacubi, Duraznal) of Uspantan. We mapped all the houses and made a census of all the families of each community.

The hazard maps coupled to the maps of the habitations and to the data of the census constitute precious documents for the authorities, to know which areas are the most dangerous, which families are the most affected and where it is more pressing to intervene.

Then the intervention measures must be elaborated case by case according to the risk level (risk = hazard x vulnerability) to the feasibility and to the financial availability.

The main objective

We propose to study how disaster preparedness and response are organized through different actors: elected bodies at the national and the municipal levels, native communities, international agencies, experts and professional organizations, research centers, and NGOs, by mapping social, economic and territorial criteria that influence and determine main forms of governance and actions

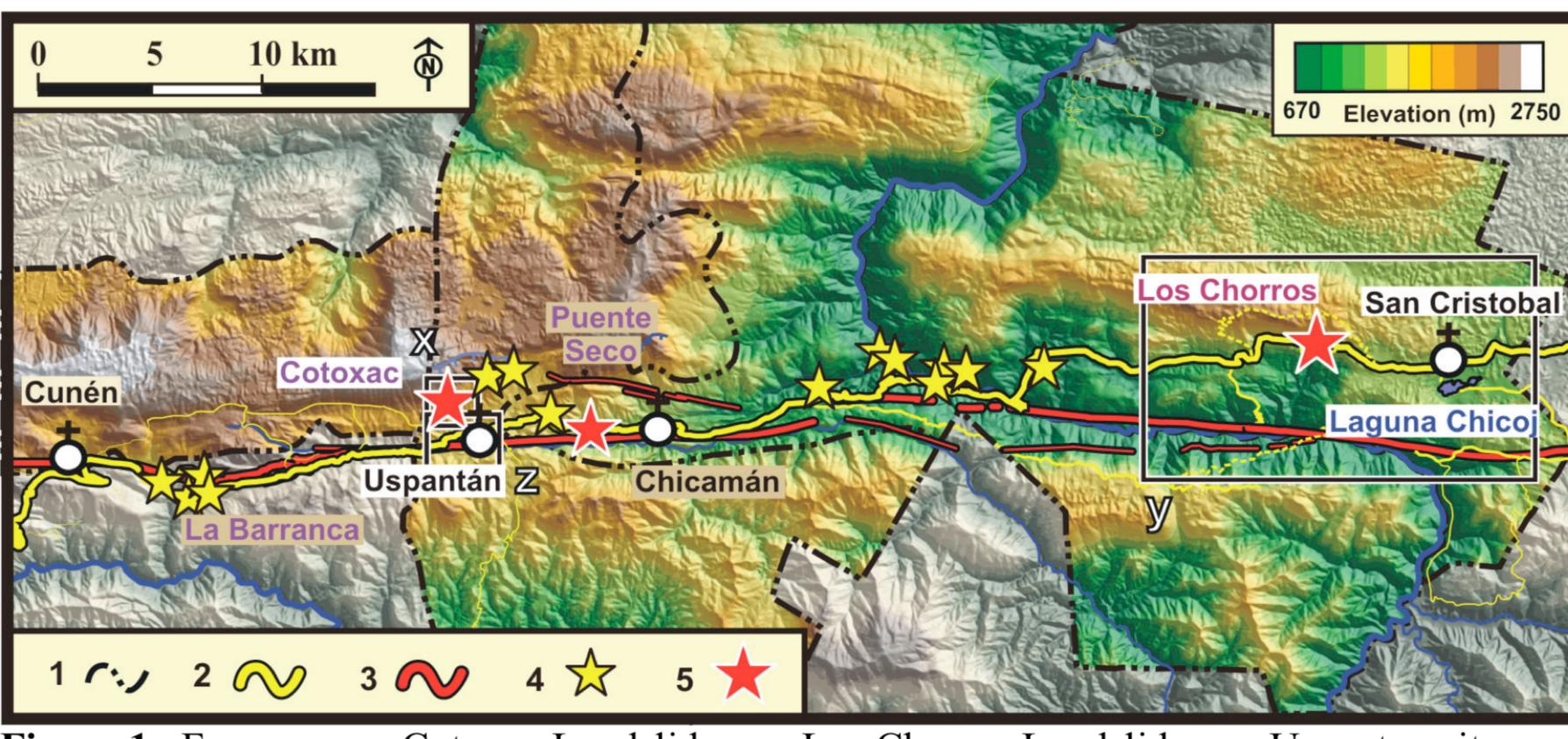
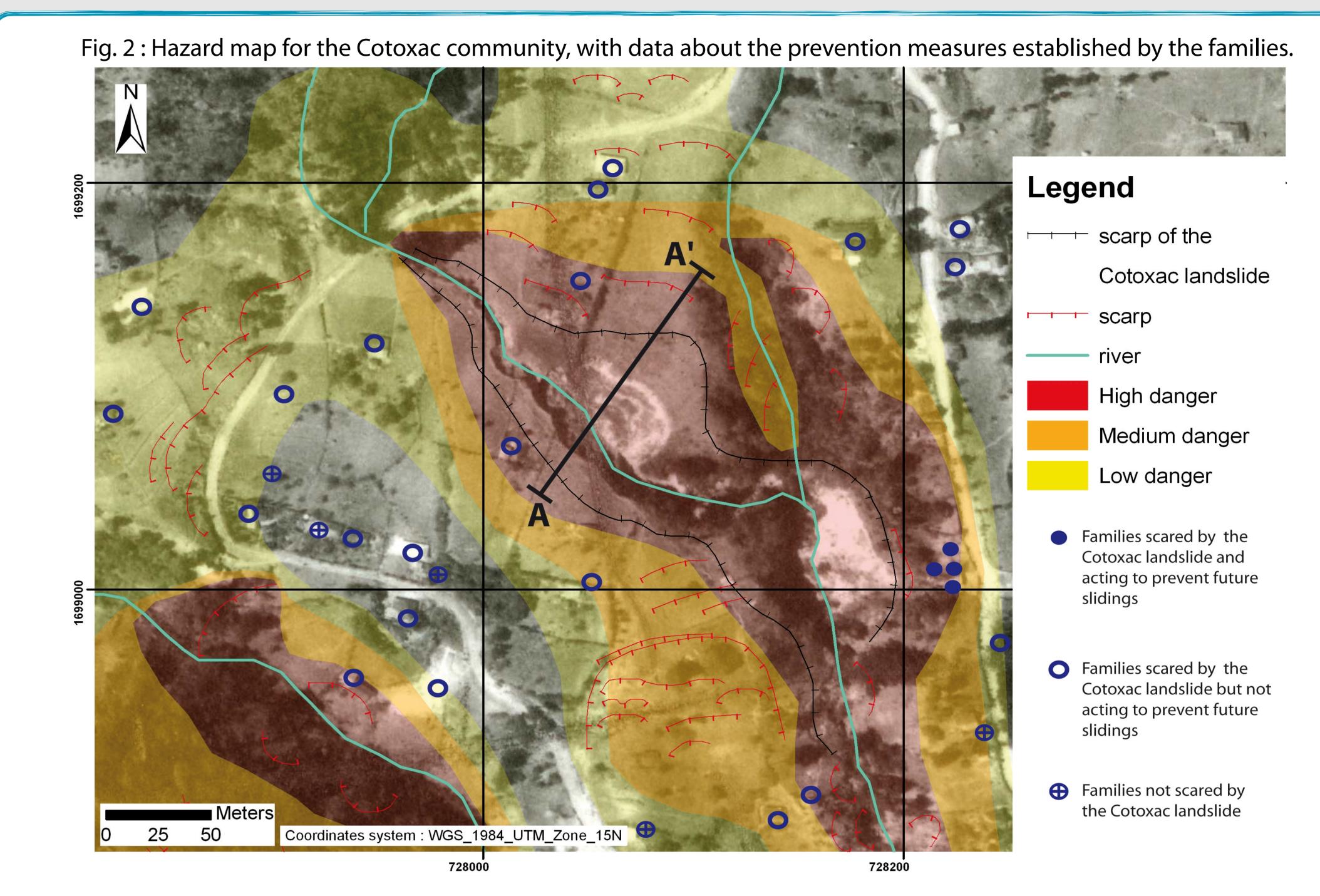


Figure 1. Frames: x - Cotoxac Landslide, y - Los Chorros Landslide, z - Uspantan city.

Study Area

nomena.

The Guatemala case is situated along a major active strike-slip fault, named Polochic that straddles the entire country. The fault crosscuts a very mountainous region, through which it has created a linear series of river valleys and formed a continuous east-west corridor where a series of small cities – including Uspantán. The population is coping with increasing landslide and flood risk without any real assistance from the local government, due to low technical capabilities, resource constraints and governance instability. The territories are ideally suited for our study, because they contain both rural and urban populations highly vulnerable to two major natural phe-



Local Study

Regularly landslides of several tens of cubic meters fall in the riverbed. Along the two banks are visible several crown cracks and regressive scarps, proving that the landslide is still getting wider

Some houses have already been displaced further from the main scarp, but in the coming years they'll be threatened again by the widening of the landslide. Other habitations are currently threatened and should be moved as soon as possible. Waiting for definitive solutions, some families living close to the main scarp organized a monitoring system during the rain season to control the opening of the cracks and the movements of the unstable masses close to their houses.

Conclusions

The constant monitoring of the evolution of the phenomena by the local population is an easy and effective way to control the risk and to avoid dramatic consequences.